CLAIMS

1. Method of controlling access of at least one
    electronic key to at least one electronic lock,
    within a predetermined timeslot, according to
    which:

    (a) prior to any attempted access of the
    electronic key to an electronic lock, a control
    time value (VH_s), delivered by a real-time clock
    of an external validating entity, is stored in
    memory in the lock;

    then, upon each attempted access of the electronic
    key to an electronic lock:

    in the electronic key:

    (b) a predetermined timeslot (PH), previously
    stored in memory in the electronic key, is read;

    (c) a trial time value (VH_c), delivered by the
    real-time clock of said external validating
    entity, is stored in memory in the key;

    (d) the timeslot (PH) and the trial time value
    (VH_c) are transmitted from the electronic key to
    the electronic lock, and

    in the electronic lock:

    (e) it is checked that the trial time value (VH_c)
    transmitted is within the predetermined timeslot
    (PH), and that it is posterior to the control time
    value (VH_s) stored in memory in the lock;

    (f) if the checks performed in step (e) are
    satisfied, access is authorized and the control
    time value (VH_s) is updated on the basis of the
    trial time value (VH_c) transmitted;

    (g) if the trial time value (VH_c) transmitted is
    outside the predetermined timeslot (PH), or if it
    is anterior to the control time value (VH_s) stored
    in memory in the lock, access of this key to this
    lock is prohibited.

2.   Method as claimed in claim 1, characterized in
     that:

     in the electronic key:

     (b1) in step (b), an electronic signature (S(PH))
     of said timeslot (PH), previously computed and
     stored in memory in the electronic key, is read in
     addition to the timeslot (PH) or instead of the
     timeslot (PH);

     (d1) in step (d), said electronic signature
     (S(PH)) transmitted from the electronic key to the
     electronic lock, on the one hand, in addition to
     or instead of the timeslot (PH), and, on the other
     hand, of said trial time value (VH$_c$), and

     in the electronic lock:

     (e1) before step (e), the signature transmitted
     (S(PH)) is checked on the basis of a specific
     checking key;

     (f1) in step (f), access is authorized and the
     control time value (VH$_s$) is updated, on the basis
     of the trial time value (VH$_c$) transmitted, only if
     the checks performed in steps (e1) and (e) are
     satisfied;

     (g1) in step (g), access of said key to said lock
     is prohibited if the trial time value (VH$_c$)
     transmitted is outside said timeslot (PH), or if
     it is anterior to the control time value (VH$_s$)
     stored in memory in the lock, or if the check
     performed in step (e1) is not satisfied.

3.   Method as claimed in claim 2, characterized in
     that the order of execution of steps (e1) and (e)
     is inverted.

4.   Method as claimed in claim 2 or 3, characterized
     in that said specific checking key is a public or
     secret key.

5.   Method as claimed in any one of the previous
     claims, characterized in that:
     in the electronic key:
     (c2) in step (c), in addition to the trial time
5   value (VH_c), an electronic signature (S(VH_c)) of
     this trial time value is calculated and stored in
     memory;
     (d2) in step (d1), said electronic signature
     (S(VH_c)) of the trial time value (VH_c) is
10   furthermore transmitted from the electronic key to
     the electronic lock, and
     in the electronic lock:
     (e2) before or after step (e), the signature
     (S(VH_c)) of the trial value is checked, on the
15   basis of a second public or secret specific
     checking key;
     (f2) in step (f), access is authorized and the
     control time value (VH_s) is updated, only if the
     checks performed in steps (e), (e1) and (e2) are
20   satisfied;
     (g2) in step (g), access of said key to said lock
     is prohibited if one of the checks performed in
     steps (e), (e1) or (e2) is not satisfied.

25 6.   Method as claimed in any one of the preceding
     claims, characterized in that said predetermined
     timeslot comprises several disjoint timeslots.

    7.   Method as claimed in any one of the preceding
30   claims, characterized in that each timeslot is an
     interval comprising two bounds each expressed as a
     date in terms of day, month, year and a time in
     terms of hours, minutes, seconds.

35 8.   System for the electronic control of access,
     within a predetermined timeslot, comprising at
     least one electronic lock (2; 42) and at least one
     electronic key (1; 41), characterized in that

the key (1; 41) comprises:

- means (13) for storing a trial time value (VH$_c$), which means are read-accessible and write-accessible, and

- means (14) of communication for transmitting a predetermined timeslot (PH) and said trial time value (VH$_c$) to the lock (2; 42), and wherein the lock (2; 42) comprises:

- means (22) for storing a control time value (VH$_s$), which means are read-accessible and write-accessible, and

- means (24) for comparing the trial time value (VH$_c$) with the predetermined timeslot (PH) and with the control time value (VH$_s$) stored in said means (22) of storage of the lock.

9. System as claimed in claim 8, characterized in that

- said means (14) of communication of the electronic key (1; 41) furthermore comprise means for transmitting an electronic signature (S(PH)) of said timeslot (PH) and an electronic signature (S(VH$_c$)) of said trial time value (VH$_c$) to the lock (2; 42), and wherein:

- the lock (2; 42) furthermore comprises means (24) for checking the electronic signatures (S(PH), S(VH$_c$)) transmitted by the key (1; 41).

10. System as claimed in claim 8 or 9, characterized in that said means (22) of storage comprise an electrically reprogrammable nonvolatile memory.

11. System as claimed in claim 8, 9 or 10, characterized in that the electronic key (1; 41) communicates with the electronic lock (2; 42) with the aid of means of contactless transmission, by electromagnetic inductance.

12. System as claimed in claim 11, characterized in that said means of contactless transmission comprise a first electromagnetic coil (31) provided in the key (1; 41) and a second electromagnetic coil (33) provided in the lock (2; 42).

13. System as claimed in claim 12, characterized in that the coils (31, 33) provided in the key (1; 41) and in the lock (2; 42) are concentric.

14. In a system for electronic access control within a predetermined timeslot comprising at least one electronic key and one electronic lock as claimed in one of claims 8 to 13, an electronic key (1; 41) comprising at least one key computation logic unit (1_1), a module (1_2) for transmitting/receiving key access control signals for implementing a method of controlling access between this electronic key (1; 41) and an electronic lock (2; 42) on the basis of lock access control signals produced by this electronic lock (2; 42), characterized in that this electronic key furthermore comprises:
- power signal generating means (1_3) driven by said key computation unit (1_1); and
- key transfer means of said key and lock access control signals and of said power signal, said key transfer means comprising at least one winding (L_1) interconnected with said power signal generating means (1_3) and with said transmission/reception module (1_2).

15. In a system for electronic access control within a predetermined timeslot comprising at least one electronic key and one electronic lock as claimed in one of claims 8 to 13, an electronic lock (2; 42) comprising at least one lock computation logic

unit (2_1) and a module (2_2) for transmitting/ receiving lock access control signals for implementing a method of access control between this electronic lock $(2; 42)$ and an electronic key $(1; 41)$ on the basis of key access control signals and of a power signal which are produced by this electronic key, characterized in that this electronic lock furthermore comprises:

- lock transfer means of said key and lock access control signals and of said power signal, said lock transfer means comprising at least one winding (L_2) interconnected with said module (2_2) for transmitting/receiving lock access control signals; and

- means (2_5) for storing the electrical energy conveyed by said power signal, which are interconnected with said winding (L_2).